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On the Ages of the Population in Liverpool and Manchester.

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[Read before Section F, (Economic Science and Statistics,) of the British Association for the Advancement of Science, at Dublin, Thursday, 27th August, 1857.]

WE are accustomed to allot the periods of human life proper to growth, maturity, and decay, by reference to Age. The test is vague and uncertain for individuals, but sufficient for large numbers.

With an account before us of the ages of a million of persons we can, with a fair degree of certainty, divide them into Two Groups, the first of which shall indicate the number fitted to take part in ruling, protecting and providing for the rest; and the second, the number of those dependent on them for these services. Intelligence, activity, and discretion are often found combined in men under 25 years of age; and often, too, these qualities remain unimpaired in men over 55 years of age. But many, also, are found deficient in these qualities between the ages of 25 and 55. And if we select from any large number of persons all the Males over 25 and under 55 years of age, it is certain that we shall thus obtain a numerical expression of its power, for all the more important purposes for which society exists, at once simple in form and sufficiently accurate to be worthy of attentive consideration.

But before doing this for Liverpool and Manchester, it may be as well to say a few words on the relative numbers of the sexes.

The population of England and Wales in 1851 consisted of—males, 8,781,225; females, 9,146,384; showing an excess of about 360,000 females.

The ages of persons, of both sexes, were then obtained and published for every period of five years, from birth to 100 years and upwards. In the first three quinquennial periods, or up to 15 years of age, the males are in excess. After 15 years of age the scale is turned; and in every subsequent quinquennial period, down to the close, the females are in excess.

Descending to the North-Western Division of the kingdom (composed of Lancashire and Cheshire) we find the females in excess, though slightly, up to 5 years of age. Then the males are very slightly in excess up to 15; and afterwards the excess is uniformly on the female side, to the end of life.

In Manchester (and under this term I include the city of Manchester and the borough of Salford)—in Manchester, there was a very slight excess of males between 5 and 10 years of age. In every other quinquennial period there was an excess of females.

In Liverpool (by which I mean the borough of Liverpool, as

defined for municipal purposes) the distribution was nearly the same as for England and Wales at large, with one exception. The males were found to be in excess up to 15 years of age. Then the females were in excess in every quinquennial period, with one exception: that from 40 to 45 years of age. At this period there was a material, but not large, excess of males.

The precise figures on which these statements are based, will be found in the tables appended to this paper; and they lead to one general conclusion: that the excess of females, common to the whole population, is somewhat more equally distributed through the different ages, in Lancashire and Cheshire, than in the rest of England and Wales.

It has been said that the Total Population of England and Wales, in 1851, was 17,927,609; of which were—

Females of all ages	9,146,384
Males under 25	4,859,667
„ over 55	858,447
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	14,864,498
Males, 25 to 55	3,063,111

So that there were, on an average, throughout the kingdom, *to every hundred Males*, of what, for the sake of distinction, I will term the *productive age*.

Females	298
Males, immature	158
„ aged	28
	<hr/>
Total.....	484

For the North-Western Division of the Kingdom, the like proportions were—to every hundred Males of the productive age

Females	289
Males, immature	155
„ aged	20
	<hr/>
Total.....	464

For Manchester—

Females	285
Males, immature	145
„ aged	15
	<hr/>
	445

For Liverpool—

Females	263
Males, immature	133
„ aged	13
	<hr/>
	409

The figures in detail will be found in the appended tables.

Here we find a rapidly descending ratio of the (so-called) non-productive part of the population; and that in each of the three groups of which it is composed. The average of the North-Western Division is less than that of the United Kingdom—that of Manchester still less—and that of Liverpool least of all.

And it is, to say the least, extremely probable that, could we ascertain the number of English persons *abroad* at the date of the census of 1851, we should find the proportion of males, from 25 to 55 amongst them, greatly in excess of the average ratio prevalent at home; and should also, on further inquiry, find that the population of the North-Western District, and that of Liverpool and Manchester in particular, contained more than an average proportion of the women, children, and young and aged men, *properly dependent upon this excess* of the productive English males abroad.

Whence it may be inferred that the excess of Males at the productive age made apparent in these figures, as existing in the particular localities referred to, is rather a defective than an excessive expression of the fact.

But the division of age and sex here suggested, is too broad and simple to escape objection, if relied upon as indicating the due proportion of the productive to the non-productive sections of the population.

Let us, then, take the number of Children, or young persons, of both sexes, under 15 years of age. These will be found to have borne, in 1851, *to every hundred Males between 25 and 55*, the following proportions:—

In England and Wales.....	207 children.
„ the North-Western Division	201 „
„ Manchester	183 „
„ Liverpool.....	171 „

Again, take the proportionate number of Females at the age at which the difference of sex exercises the most powerful influence, and when women may be most justly assumed to be productive. The Women from 15 to 40 years of age, to every hundred males from 25 to 55, were

In England and Wales	122·1 women.
„ the North-Western Division	126·4 „
„ Manchester	132·1 „
„ Liverpool	123·5 „

Here we may reasonably infer that factory labour for Women, acting on the tendency to migrate in search of employment, raised the proportion for the North-Western Division, and notably for Manchester; leaving Liverpool with an average but little removed from

that of the entire kingdom. And this inference is in some degree confirmed by dividing this female group, 15 to 40, into two sections 15 to 25 and 25 to 40.

In the younger of these two groups, the demand may be supposed to have reference rather to factory employment, and in the elder to considerations more purely sexual.

We find, then, that the number of females from 15 to 25 years of age, to every hundred Males from 25 to 55, was

In England and Wales	57·3 females.
„ the North-Western Division	59·9 „
„ Manchester.....	61·5 „
„ Liverpool	55·4 „

Here Liverpool shows a smaller ratio than that of the entire Kingdom.

The corresponding numbers of females from 25 to 40 years of age, were

In England and Wales	64·8 females.
„ the North-Western Division	66·5 „
„ Manchester.....	70·6 „
„ Liverpool	68· „

Here Liverpool is in excess of the kingdom, and even of the North-Western Division, in the proportion of such females allotted to males, of what I have termed the productive age.

It has been observed that the males under 25 years of age, and thence classed as “immature,” are deficient in Liverpool and Manchester. Dividing the group into sections, we have the following result:—

Males.	To every Hundred Males, 25—55.			
	England and Wales.	North-Western Division.	Manchester.	Liverpool.
0—15	104·1	100·5	91·3	86·
15—25	54·4	54·9	53·5	47·6

There is a somewhat similar deficiency in Liverpool and Manchester of the group of males over 55, and thence marked “aged.” If we add to the justice of the term, by confining it to males over 65 years of age, we find the proportions to be as under:—

Males.	To every Hundred Males, 25—55.			
	England and Wales.	North-Western Division.	Manchester.	Liverpool.
Over 65 years } of age }	12·2	8·2	5·3	4·4

That the *productive and defensive power* of a given population is dependent, in a great measure, upon the ages of the individuals composing it, will probably not be disputed, and is now tolerably well understood. But this admitted, we can hardly refuse to admit something more. The *character and conduct* of the population, and that not only individually but collectively, may be reasonably supposed to be similarly affected.

It has already been shown that sanitary improvements, by lengthening the duration of life, tend directly to increase the proportion of mature and aged persons to the whole of the population on which they take effect. This must needs prolong the effects of experience upon such a population; and when taken together with the prestige commonly conferred upon opinions by the ages of those who utter them, may be expected to give a corresponding influence to reason, as opposed to passion, in the affairs of a population so placed.

The high and increasing value of life in England, indicates a large and increasing proportion of matured minds; and undoubtedly has a corresponding influence on the exercise of the national will, as well at home as abroad—an influence already traceable in our political history.

There is no apparent reason why municipal action should not be influenced by the same causes; and hence it is that I have deemed the figures, touching the ages of the population of Liverpool and Manchester, here laid before the section, worthy of the labour necessary to place them there.

Eldon Chambers, Liverpool,
23rd August, 1857.

TABLE I.
Ages in the Larger Areas.

1851.	England and Wales.		North-Western Division.		To 10,000 Males aged 25—55.			
					England and Wales.		North-Western Division.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Total Populn. }	8,781,225	9,146,384	1,215,832	1,274,995	28,668	29,860	27,629	28,973
0—25....	4,859,667	4,917,952	684,452	705,784	15,865	16,055	15,554	16,038
25—55...	3,063,111	3,248,458	440,058	464,953	10,000	10,605	10,000	10,566
55 and upwards }	858,447	979,974	91,322	104,258	2,803	3,199	2,075	2,369
0— 5	1,176,753	1,171,354	165,671	165,827	3,842	3,824	3,765	3,768
5— 10	1,050,228	1,042,131	142,747	142,655	3,429	3,402	3,244	3,242
10— 15	963,995	949,362	134,111	133,628	3,147	3,099	3,048	3,037
15— 20	873,236	883,953	124,128	130,230	2,851	2,886	2,821	2,959
20— 25	795,455	871,152	117,795	133,444	2,597	2,844	2,677	3,032
25— 30	699,345	771,130	105,244	116,350	2,283	2,517	2,392	2,644
30— 35	617,889	658,237	91,082	97,547	2,017	2,149	2,070	2,217
35— 40	532,680	555,879	76,227	78,909	1,739	1,815	1,732	1,793
40— 45	474,211	494,408	68,653	71,023	1,548	1,614	1,560	1,614
45— 50	392,882	406,107	53,709	55,135	1,283	1,326	1,220	1,253
50— 55	346,104	362,697	45,143	45,989	1,130	1,184	1,026	1,045
55— 60	254,892	271,395	29,482	31,807	832	886	670	723
60— 65	227,240	254,070	25,406	28,856	742	829	577	656
65— 70	151,640	175,879	15,903	18,732	495	574	361	426
70— 75	114,730	135,432	11,362	13,140	375	442	258	299
75— 80	65,016	81,086	5,741	7,082	212	265	130	161
80— 85	31,690	42,150	2,461	3,275	103	138	56	74
85— 90	10,423	14,982	772	1,031	34	49	18	23
90— 95	2,282	3,969	151	268	7	13	3	6
95—100	456	874	37	54	1	3	1	1
100 and upwards }	78	137	7	13

TABLE II.
Ages in Manchester and Liverpool.

1851.	Manchester City and Salford Borough.		Liverpool Borough.		To 10,000 Males aged 25—55.			
					Manchester and Salford.		Liverpool.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
Total Populn. }	191,457	209,864	182,058	193,897	26,054	28,558	24,707	26,313
0—25	106,518	113,002	98,559	103,630	14,495	15,377	13,375	14,063
25—55 ...	73,488	82,092	73,688	77,259	10,000	11,171	10,000	10,485
55 and upwards }	11,451	14,770	9,811	13,008	1,558	2,010	1,331	1,765
0— 5	25,705	26,031	23,976	23,938	3,498	3,542	3,254	3,249
5— 10	21,478	21,318	20,498	20,118	2,923	2,901	2,782	2,730
10— 15	19,974	20,449	18,950	18,701	2,718	2,783	2,572	2,538
15— 20	19,394	21,245	17,226	18,781	2,632	2,891	2,338	2,549
20— 25	19,967	23,959	17,909	22,092	2,717	3,260	2,430	2,998
25— 30	17,952	20,641	17,137	19,356	2,443	2,809	2,326	2,627
30— 35	15,269	17,452	16,373	17,312	2,078	2,375	2,222	2,349
35— 40	12,573	13,818	13,024	13,501	1,711	1,880	1,767	1,832
40— 45	11,755	12,787	12,105	11,893	1,600	1,740	1,643	1,614
45— 50	8,692	9,460	8,118	8,135	1,183	1,287	1,102	1,104
50— 55	7,247	7,934	6,931	7,062	986	1,080	941	958
55— 60	4,089	4,727	3,569	4,019	557	643	484	545
60— 65	3,403	4,349	3,012	3,957	463	592	409	537
65— 70	1,822	2,478	1,509	2,179	248	337	205	296
70— 75	1,239	1,801	1,021	1,544	169	245	139	210
75— 80	560	862	455	775	76	117	62	105
80— 85	236	403	164	380	32	55	22	52
85— 90	79	113	64	100	11	15	9	14
90— 95	15	23	12	38	2	3	2	5
95—100	5	12	4	10	1	2	1	1
100 and upwards }	3	2	1	6	1